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Evans, P.M.

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REPORT OF THE SECRETARY'S COMMITTEE ON

PHYSICAL PROBLEMS RELATED TO STORAGE OF FARM PRODUCTS

MARCH 1938

4 1 2 C 1946

# UNITED STATES DEPARTMENT OF AGRICULTURE OFFICE OF THE SECRETARY WASHINGTON

March 15, 1938

### LETTER OF TRANSMITTAL

Dear Mr. Secretary:

I am transmitting herewith report on physical problems in connection with the storage of farm products. This is in compliance with request in your memorandum of December 6, 1937 setting up the committee on physical problems that might be involved in the storage of farm products.

Sincerely yours,

R. M. Evans Chairman et.

# REPORT OF THE COMMITTEE ON PHYSICAL PROBLEMS RELATED

# TO STORAGE OF FARM PRODUCTS\*

The Committee on Physical Problems Related to Storage of Farm Products has met weekly since its appointment and now submits the following report on corn, wheat, cotton, rice and tobacco.

For convenience, the report is arranged in three parts: (I) A summary of recommendations for each commodity, (II) an explanation of recommendations and operating procedure, and (III) an appendix.

#### PART I. RECOMMENDATIONS

The Committee recommends that:

- 1. Wheat, corn, cotton, rice and tobacco in the Ever-Normal Granary Program be stored in structures licensed under the Federal Ware-house Act, except that wheat and corn may be stored also in farm granaries or cribs in designated areas under regulations to be prescribed.
- 2. That the grade and staple length and any condition affecting the merchantability of cotton, such as excessive moisture, dirt, or decayed cotton be stated on all warehouse receipts tendered as collateral under the Ever-Normal Granary Program.

<sup>\*</sup>The committee is as follows: R. M. Evans, Chairman, Wallace Ashby, Cecil Johnson, Reuben Brigham, Edward C. Parker, J. W. T. Duvel and S. C. Salmon. Various other representatives of the Department including Percy N. Annand, Roy M. Green, Chas. B. Ingram, W. H. King, Lawrence Myers, and H. S. Yohe contributed to this report.

- Program be stored either (a) as ear corn in acceptable cribs located in designated areas where farm storage of ear corn for extended periods is considered practical, or (b) as shelled corn in storage structures licensed under the Federal Warehouse Act, or in appropriate and properly constructed farm granaries. It is further recommended that (c) all shelled corn other than that in farm storage shall be merchantable, shelled field corn with not more than 15 1/2 percent moisture and which otherwise meets the requirements of No. 3 Corn or better, (d) storage of ear corn be limited to merchantable, busked field corn containing not more than 20 1/2 percent moisture as determined from a representative sample of shelled corn obtained from the ear corn, and (e) all shelled corn in farm storage be merchantable, shelled field corn, which contains not more than 14 percent moisture with a damage content no greater than the requirements for No. 3 Corn.
- 4. Wheat tendered as collateral under the Ever-Normal Granary Program be stored in structures licensed under the Federal Warehouse Act, provided that in designated areas where wheat in farm storage can be adequately protected from insect damage, farm storage in acceptable structures be permitted. It is further recommended that wheat in the Ever-Normal Granary be limited to No. 2 grade or better for hard red spring wheat and to No. 3 grade or better for all other classes, except that hard red spring wheat and durum wheat stored on the farm may contain not more than 13 1/2 percent moisture, and all other classes stored on the farm

may contain not more than 13 percent moisture; also that no wheat stored on farms be accepted as collateral for loans until at least 30 days after it has been placed in storage.

- 5. Provision be made for approving farm storage structures and for evaluating the grain tendered as collateral. Grain accepted for collateral in farm storage should be inspected periodically in an adequate and competent manner under Federal supervision.
- 6. Fumigation of farm granaries prior to storage, and subsequently of the grain therein be made, whenever necessary, at the expense of the borrower.
- 7. Except in years of marketing quotas and mandatory scaling, provisions for releasing commodities under seal be made sufficiently flexible to permit those who wish to pay off their indebtedness by sale of the commodity to do so without inconvenience or penalty.
- 8. Regulations provide for moving grain under seal from one location to another and for the substitution of its equivalent of new or other like grain in the same or other locations, either at the request of the borrower or by the requirement of the Secretary.
- 9. Provision be made for calling loans and disposing of the commodity in case of actual or threatened impairment of the collateral.
- 10. In cases of forced liquidation of loans, or in case the borrowers elect to deliver the collateral in payment of their loans, it be the policy of the Secretary to transfer as soon as practical the wheat to Federally-licensed warehouses and the corn to appropriate storage structures.

# PART II. EXPLANATION OF RECOMMENDATIONS AND OPERATING PROCEDURE

#### COTTON

The Committee has carefully considered the various ways in which cotton may be stored. It has come to the conclusion that only cotton that is stored under the Federal Warehouse Act should be accepted as collateral for loans under the Ever-Normal Granary Program.

### CORN AND WHEAT

All grain stored in structures licensed under the Federal Ware-house Act is subject to the requirements of that Act, which it is believed protects the Government's interest adequately. With respect to grain in farm storage there are many problems that must receive careful consideration if the interests of the Government are to be protected adequately.

#### CORN AND WHEAT IN FARM STORAGE

# Inspection and Approval of Storage Structures and of Grain

Inspection and approval of storage structures prior to the time they are filled with the commodity offered as collateral to loans and at the time of the loan application, and of the grain at the time of the loan application and subsequent thereto, are considered of primary and fundamental importance. The storage structures should be such as to afford adequate protection for the grain against damage and theft, and in the

case of wheat and shelled corn be such as to permit effective fumigation. The quantity of grain in the bin or crib must be carefully determined and representative samples of the grain must be secured and evaluated with respect to the total quantity and quality of the grain and its condition for safe storage. This, in the opinion of the Committee, requires competent personnel with grain experience working under Federal supervision.

#### FARM STORAGE OF CORN

Under the Ever-Normal Granary Program newly husked corn will be stored in cribs. Such corn, due to its high moisture content, ordinarily will not shell satisfactorily, and it is hazardous to store corn shelled from newly husked corn. In most years, however, newly husked corn will store safely and condition itself in properly constructed cribs in the commercial corn area. If the ear corn is left in the crib from the time of picking throughout the succeeding spring, it may then be shelled and safely stored in properly constructed granaries. Provisions should be made also for the storage in appropriate storage structures of shelled corn meeting certain requirements. This will make the program flexible and will free cribs for the storage of each succeeding crop.

#### STORAGE STRUCTURES FOR EAR CORN

Corn cribs on most farms do not completely enclose the corn stored therein. In order to avoid and detect theft, the regulations of the Ever-Normal Granary should provide that cribs containing corn offered

as collateral for Federal loans be completely and securely enclosed and constructed in such a manner as to require a forceful breaking to make entry into the crib. Such cribs should also be so constructed to protect the corn stored therein from damage and be of such dimensions that the corn will be conditioned properly.

In the current corn loan program, the County Agricultural Conservation Committees have found it entirely practical to classify cribs as eligible or ineligible for the storage of corn on which Federal loans may be granted. It is anticipated that crib classification data will be available for future loan programs.

#### STORAGE STRUCTURES FOR SHELLED CORN

The structural requirements for the safe storage of wheat as discussed later are equally applicable to the storage of shelled corn and are not repeated here.

#### CORN ACCEPTABLE FOR LOANS

Ear corn put into cribs in the fall often contains up to 25 percent moisture or more. The storage of such corn is hazardous. The regulations of the current corn loan program set 20 1/2 percent as the maximum moisture content of ear corn acceptable as collateral to loans. Because this limit is apparently satisfactory, no change has been made in this connection in this report.

With respect to shelled corn in farm granaries, it is recommended that loans be limited to corn containing not more than 14 percent moisture and with a damage content no greater than the requirements for No. 3 Corn.

#### MEASUREMENT OF EAR CORN

The regulations used in the present corn loan program provide a satisfactory method for measuring corn in cribs, making deductions for ventilators, cross-braces, ties, husks, foreign matter, and moisture. It is recommended that these regulations which are a part of the appendix be followed.

#### FARM STORAGE SPACE AVAILABLE FOR CORN

According to a recent survey, adequate storage space for the quantity of ear corn proposed for the Ever-Normal Granary is believed to be available. It is not properly distributed, however, as indicated in table I of the appendix. In many communities additional space must be provided by new construction or by repairs of old structures not now suitable.

As shown in table II of the appendix, there is available considerable storage space suitable for the storage of shelled corn.

Possibly a portion of this can be used to supplement the crib space, especially when conditions make it desirable to retain for another year a quantity of old corn.

## FARM STORAGE OF WHEAT

#### STORAGE STRUCTURES

Structures intended for the storage of wheat under the Ever-Normal Granary Program should be examined and thoroughly cleaned prior to filling with grain, and should be fumigated where necessary, or whenever required by the Secretary or his authorized representative.

The construction should be substantial, such as to protect the grain against theft, damage, grain leakage, and to permit effective fumigation.

#### WHEAT ACCEPTABLE FOR LOANS

Wheat visibly infested with insects or which contains so much moisture as to invite damage from heating, molding, or fermentation, should not be accepted as collateral for loans.

Experience has shown that 14 percent moisture content is the approximate maximum safe limit for wheat in commercial channels, except that for hard red spring and durum wheats the approximate safe limit of moisture is 14 1/2 percent. For storage on the farm where facilities for conditioning wheat practically do not exist, a lower limit for maximum moisture is necessary to assure safe storage. The Committee recommends that this maximum limit be set at 13 1/2 percent for hard red spring and durum, and 13 percent for all other classes.

Because of the very great danger of damage from insects in stored

grain, no wheat on farms should be accepted as collateral for loans in those areas where insects make storage hazardous.

#### INSPECTION AND SAMPLING

To determine the acceptability of wheat stored on the farm as collateral to loans, representative samples should be taken not less than 30 days after the wheat is placed in storage; subsequent to the making of loans, representative samples should be taken to determine the condition of the wheat in storage. All samples should be taken by an authorized representative of the Secretary.

The test weight and moisture content of the samples should be determined and they should be examined for insect infestation, evidence of mold, heating, other damage, and admixtures of other grain and objectionable foreign material.

If the quality of the wheat in the bin is not uniform, the appraisal of the grain in the entire bin should, for the purpose of the loan, be determined by the portion having the poorest quality or the highest moisture content.

#### FUMIGATION

Adequate fumigation of the granary may be required at the option of the Secretary, or his authorized representative, before the grain is stored, and fumigation of the grain may be required at intervals thereafter in all producing regions. The loan agreement should provide that the owner

fumigate the grain within 5 days after learning of insect infestation, or on advice from the authorized representative of the Secretary, and that he will immediately notify the representative of the Secretary when fumigation has been completed. In case the owner fails to properly fumigate the grain, it should be the duty of the local representative of the Secretary to fumigate, charging the cost of same to the owner, or to terminate the loan and take over the collateral.

#### MEASUREMENT OF BINS AND AMOUNT OF LOAN TO BE MADE

It is seldom possible to weigh wheat on a farm and, hence, the quantity must be determined by measuring the grain in the bin. One and one-fourth cubic feet of 60-pound test weight per bushel wheat is generally accepted as a bushel weighing 60 pounds avoirdupois. A bushel of wheat having a test weight less than 60 pounds occupies more space than 60-pound test weight wheat or conversely one and one-fourth cubic feet will hold less than a bushel of such wheat. For this reason a margin of safety with respect to the quantity estimated must be provided in order to cover bushel variations arising from test weight variations, as well as shrinkage, leakage, and handling losses.

#### AVAILABLE STORAGE SPACE

Table II of the appendix shows by States the availability of storage space on typical Middle-West farms. It indicates that in the aggregate there is more space available than is needed for storage of the

quantities of wheat proposed to be carried in the Ever-Normal Granary, although in every community there are farms with no suitable space for this purpose.

# GENERAL PROVISIONS FOR HANDLING GRAIN UNDER SEAL IN FARM STORAGE

### Tenancies and Changes in Ownership

The Ever-Normal Granary Program, in general, contemplates the storage of grain from one crop year to another. Where tenants occupy farms for limited periods so that their rights in grain storage facilities are not sufficient to satisfy the program requirements, it may be necessary to arrange for the movement of grain which is collateral to loans from one location to another. This same situation may exist in connection with changes in ownership. The Ever-Normal Granary Program therefore should provide authority in authorized local representatives of the Secretary to permit borrowers to move grain under seal from one location to another. It may be desirable also to provide for sealing the grain of the landlord and his tenant jointly.

#### SUBSTITUTION OF GRAIN UNDER SEAL

Circumstances will sometimes arise when it will be desirable to substitute new crop grain or other grain for that under seal. Regulations should provide for such substitution either at the request of the borrower or by the requirement of the Secretary.

# RELEASE OF GRAIN UNDER SEAL

Except in years of marketing quotas and mandatory sealing, the regulations for releasing grain under seal should be sufficiently flexible so that those who want to pay off their indebtedness through sale of the grain may do so without inconvenience or penalty. This can be accomplished by authorizing local representatives of the Secretary to release the seals and collect the proceeds from the sale of the grain to be applied to the payment of the loan.

#### SEALS, STORAGE CERTIFICATES, AND THEIR ISSUANCE

The seals used for sealing farm storage structures should be of conspicuous construction and should be so attached to the structure as to give public notice that the grain is under seal in the Ever-Normal Granary. These seals should be issued and posted by representatives of the Secretary in connection with the issuance of storage certificates. Because of the lack of uniformity in the sealing regulations of the several States relating to the farm storage of commodities and the absence of such provisions in other States, it is essential for the Department to undertake the issuance of storage certificates.

#### LOCAL SUPERVISION BY FARMERS

In order that the administrative costs may be kept on an economical basis, it is desirable to assign the inspection and supervision of grain in

farm storage and supervision of the delivery of such grain to the authorized farmer representatives of the Secretary handling the other phases of the program. These authorized farmer representatives should be subject to such Federal supervision and instruction as will result in uniform and proper local administration of the program.

#### DISPOSITION OF GOVERNMENT GRAIN

In cases of forced liquidation of grain in farm storage and where the borrowers elect to deliver such grain collateral in payment of their loans, it will be necessary for the Government to provide storage until such time as it is appropriate or possible to dispose of the grain. In such cases it will be often difficult to arrange for suitable storage space on farms. In these cases borrowers should be required to deliver the grain to a nearby shipping point. It should be required that ear corn be shelled before delivery, unless this requirement be waived.

The grain may then be accumulated, shipped, and stored in Federally-licensed warehouses or in the case of corn, in other acceptable storage structures.

#### EDUCATIONAL PROGRAM

The success of the storage provisions of the Ever-Normal Granary

Program will depend very materially on the cooperation of farmers who propose to take advantage of it. The extent of this cooperation will depend in turn on their understanding of the program in advance of its inception. In many cases, as indicated in Tables I and II of the Appendix, considerable repairing of old structures will be necessary. Possibly in some communities prospective participants will desire to erect new structures. In order to do either effectively they must know what will be required.

### REPORT OF THE COMMITTEE ON STORAGE OF RICE AND TOBACCO

The Committee on Physical Problems Related to Storage of Farm Products now submits the following report on rice and tobacco.

#### RICE

The Committee recommends that:

- as collateral to Federal loans, shall be stored in warehouses licensed under the Federal Warehouse Act, and all warehouse receipts issued therefor shall have embodied within their written terms a statement of the class and grade of the rice according to the official rice standards of the United States. Rice for these purposes shall be rough rice but shall not include Mixed Rice.
- 2. Rough rice at the time tendered for such storage or collateral shall not contain more than 14 percent moisture and shall meet the requirements of grade No. 3 or better but shall not be of any of the special grades Damp, Wet, Very Wet, Seedy, Very Seedy, Muddy, Very Muddy, Very Chalky, Weevily, and Musty.
- 3. Rough rice stored for the Ever-Normal Granary or as collateral to Federal loans shall be removed annually from storage, and in the event of unliquidated loans there shall be substituted therefor new-crop rough

rice of equal loan-rate value and that meets all of the above minimum requirements for rough rice.

#### TOBACCO

The Committee recommends that:

- 1. Tobacco in the Ever-Normal Granary Program be stored in warehouses licensed under the Federal Warehouse Act.
- 2. Tobacco be accepted as collateral for Federal loans only when inspected and certified as to condition and grade by a Federal tobacco inspector and certified as to quantity by a weigher licensed under the Federal Warehouse Act.
- 3. No tobacco of nondescript grade be accepted as collateral for Federal loans. Higher minimum requirements may be established as a condition of the loan with respect to any type of tobacco.

# EXPLANATION OF RECOMMENDATIONS AND OPERATING PROCEDURES FOR TOBACCO

The recommendations made above contemplate that except in Maryland and districts producing cigar tobacco, tobacco offered as collateral to Federal loans will be assembled at concentration points for the necessary classing, commingling by grades, and packing or prizing for storage. As a general rule it is impractical for farmers to dry, pack, and store their own tobacco. Loans should not be granted until the tobacco offered as collateral is assembled, reclassed, graded, and packed. The reclassing and prizing will be done under the supervision of Federal inspectors

who shall issue the final certificate of grade on each hogshead or bale, and stamp the number thereof on the container.

Because of the various grades contained in each lot of tobacco, as delivered by the grower, and the necessity for reclassing and commingling by grades, it is, in general, impractical to preserve the identity of each farmer's lot after it reaches the assembling point. This means that in districts where tobacco is sold in loose leaf form the Ever-Normal Granary Program can operate only where there are cooperative tobacco marketing associations, or other agencies which function as such, for reclassing and commingling the tobacco by grades, issuing to growers participation receipts for their crop, marketing the crop and making final settlement to the growers for their equity. Loans would be secured by warehouse receipts for stated quantities of indicated grades. The amount of the loan would be determined by the grade of tobacco delivered by the farmer as certified by a Federal tobacco inspector at the time of delivery, and based on delivery weights.

In some cases it may be necessary for cooperative marketing associations to amend their member-contracts as to title to the tobacco so as to meet the requirements of the Ever-Normal Granary Program.

Maryland tobacco is almost always packed on the farm and delivered to warehouses in Baltimore. The hogsheads are opened for inspection only and are stored in the name of the grower until sold. Under these conditions the identity of each lot of tobacco is preserved and loans can be made direct to the farmer-owner. In some cigar tobacco districts loans direct to growers may be possible.

The Committee recommends that an educational program be inaugurated at an early date so that farmers will be apprised of the program requirements of this year's crop.

Respectfully submitted,

/s/ R. M. EVANS
R. M. Evans - Secretary's Office, Chairman

/s/ WALLACE ASHBY
Wallace Ashby - Bureau of Agr. Engineering

/s/ CECIL JOHNSON
Cecil Johnson - Agr. Adj. Administration

/s/ REUBEN BRIGHAM
Reuben Brigham - Extension Service

/s/ EDWARD C. PARKER
E. C. Parker - Bureau of Agr. Economics

/s/ J. W. T. DUVEL
J. W. T. DUVEL
J. W. T. Duvel - Commodity Exchange Admin.

/s/ S. C. SALMON
S. C. Salmon - Bureau of Plant Industry

# PART III. APPENDIX

The following includes (1) tables of data relating to the farm storage space available for ear corn and for shelled corn and wheat and the condition of such storage space in certain mid-western States, and (2) regulations of the 1937-38 corn loan program.

TABLE I
FARM CLASSIFICATION OF CRIB STORAGE

·		the state of the s		
		Percent of farms having	ng storage cl	assifications
State	A Storage	B Storage	C Storage	No Storage
Illinois	83.6	10.2.	6.2	· puris starili gandi
	00.0	, .,		
Indiana	62.8	23.3	11.6	2.3
<u> </u>	0,5 • 6: -		11.0	200
Iowa	67.8	23.0	6.9	2.3
1044	07.0		0,5	2.0
Kansas	32.1	26.4	5.7	35.8
nairsas	· 0%•1	20•€	0.1	20.0
Minnesota	16.0	16.5	9.0	28.4
Minnesota	46.2	10.0	3.0	&0 • ±
16.	70 8	SPI C	10.4	22.3
Missouri	39.7	27.6	TO • #	& <b>&amp;•</b> 3
	50.5	67. 4	77 4	7.0 4
Nebraska	50.8	21.4	11.4	16.4
				4
South Dakota	27.0	13.5	16.3	43.2

TOTAL CRIB SPACE AVAILABLE CLASSIFIED BY STATES IN PERCENTAGE OF THE NORMAL CROP; AND ITS CONDITION IN PERCENTAGE

State	needed storage	Classification	of available	storage space	
Illinois	74	87	6	7	
			Ö	7	
Indiana	93 -	67	24	9	
Iowa	90	76	18	6	
Kansas	81	64 .	27	9	
Minnesota	39	69	18	12	
Missouri	71	51	39	10	
Nebraska	80	62	22	16	
South Dakota	47	63	. 19:	18	

A - Present condition satisfactory, or possible to be made satisfactory with repair not to exceed 10% of original cost.

B - Present condition unsatisfactory, but possible to be made satisfactory with repair cost of from 10% to 50% of original cost.

C - Unsatisfactory, with repair considered inadvisable.

TABLE II
FARM CLASSIFICATION OF SMALL GRAIN STORAGE SPACE

	Percentage of farms having				
State	A Storage	B Storage	C Storage	No Storage	
Illinois	92.0	6.2		1.8	
Indiana	53.5	14.0		32.5	
Iowa	78.2	18.4		3.4	
Kansas	58.6	28.2	9.4	3.8	
Minnesota	53.7	28.4	1.5	16.4	
Missouri	50.0	34.0	3.4	12.6	
Nebraska	65.6	24.5	6.6	3.3	
South Dakota	35.3	24.3	16.2	24.2	

PERCENTAGE SMALL GRAIN STORAGE SPACE AVAILABLE BY STATES FOR STORING NORMAL CROP AND ITS CONDITION IN PERCENTAGES

State	Percentage of needed storage	Classification	of available	storage space
	space available	A	В	С
Illinois	98	96	4	e e e e e e e e e e e e e e e e e e e
Indiana	117	83	17	
Iowa	111	83	15	2
Kansas	155	60	30	10
Minnesota	78	61	38	1
Missouri	129	61	36	3
Nebraska	206	63	32	5
South Dakota	87	45	28	27

A - Present condition satisfactory, or possible to be made satisfactory with repair not to exceed 10% of original cost.

B - Present condition unsatisfactory, but possible to be made satisfactory with repair cost of from 10% to 50% of original cost.

C - Unsatisfactory, with repair considered inadvisable.

# CRIB REQUIREMENTS IN THE 1937-38 CORN LOAN PROGRAM

Foundation. - Substantial enough to bear the load of corn and crib without the possibility of its settling to an extent which might cause the crib to warp and break open. Floor. - Strongly constructed and high enough above the ground level to facilitate ventilation and afford protection against damage to the stored corn from moisture and rodents. Walls. - Slatted, cribbed, or ventilated on both sides beginning at the floor line. Width. - Narrow enough to afford ample cross ventilation to dry out the corn under the prevailing climatic conditions of the locality where the crib is located. Roof. - Tight and substantial enough to protect the corn against prevalent weather conditions for a period of 2 years. Structure. - Studs, joists, braces, and cross ties of sufficient dimension and frequency to withstand any ordinary breaking pressures. Sealing structure. - The crib must be completely and securely enclosed, and sealed in such a manner as to require a forceful breaking to make entry into the crib.

# REGULATIONS IN THE 1937-38 CORN LOAN PROGRAM FOR MEASUREMENTS AND QUANTITY DETERMINATION OF EAR CORN

19. All figures listed under this item must be actual measurements, not estimates. The measurements of the corn must be inside crib measurements and must be taken very carefully. Before measuring the height of the corn the sealer should insist that the corn be leveled off evenly. Extreme care should be taken in measuring the diameter of a round crib. If possible, the sealer should get inside on top of the corn to measure the inside diameter of the crib and the diameter of the center ventilator.

- 20. The volume of a rectangular crib is computed by multiplying the width by the length by the height, which gives the cubic feet. The volume of a round crib is computed by multiplying the circumference by one-fourth of the diameter times the height. In case the round crib has a ventilator in the center, the outside diameter of the ventilator should be subtracted from the diameter of the crib, this figure divided by 4, and the result obtained multiplied by the circumference, and that times the height to secure the cubic feet.
- 21. Where cribs of any type contain chutes or ventilators which take up space included in the over-all measurements of the corn, careful measurements should be taken of such chutes or ventilators and their total volume in cubic feet should be shown in item 21.
- 22. After making deduction for chutes and ventilators from the total volume in item 21, the result is the volume of stored corn in cubic feet.

  This is transposed to bushels by merely dividing the number of cubic feet by 2.5, or multiplying by 0.4, either of which will give the result in bushels.
- 23. This item provides for a percentage deduction for space occupied by studs, braces, and cross ties. This can be figured out accurately or estimated. In small cribs, 2 percent of the space is usually occupied by these items, and in larger cribs where the dimensions are larger and the spacing more frequent at least 3 percent should be deducted.

Snapped corn is not eligible as corn collateral for a Federal corn loan.

Note: When corn is snapped, nearly 25 percent of the space is occupied by husks. Likewise, corn having one-half or more of its original husks shall be ineligible as corn collateral for a Federal corn loan. Deductions up to 10 percent should be made for husks in lesser amounts.

Deductions on a percentage basis for improperly filled ears are only necessary where the cribbed corn contains ears which have failed to fill properly because of drought, insects, or other unusual conditions.

The sum of the above deductions constitutes the percent of deduction to be applied in determining the quantity of corn to be reported in the warehouse certificate.

A deduction will be made for moisture content in excess of 14 percent in accordance with the following table:

Moisture Content	Deduction	Moisture Content	Deduction
14% to 14½% 14½% to 15½% to 16½% to 17½%	None	17 % to 18 %	8%
	2%	18 % to 19 %	10%
	4%	19 % to 20 %	12%
	6%	20 % and above	no loan